

Message

From: Laura Olah [info@cswab.org]
Sent: 4/19/2018 3:31:24 PM
To: Adams, William [Adams.William@epa.gov]
CC: Hautman, Dan [Hautman.Dan@epa.gov]
Subject: RE: list of branched and linear isomers
Attachments: ta2944.pdf

In the interim I found this -- sending in case of interest. Laura

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Laura Olah | Executive Director
Citizens for Safe Water Around Badger - CSWAB.org
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E12629 Weigand's Bay South, Merrimac, WI 53561
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From: Adams, William [mailto:Adams.William@epa.gov]
Sent: Thursday, April 19, 2018 10:22 AM
To: info@cswab.org
Cc: Hautman, Dan
Subject: RE: list of branched and linear isomers

Hi Laura,

I can only speak to Method 537 mentioned in the document and not the modified method. Method 537 discusses in Section 7.2.3 which materials should be used as standards. PFOS, PFOA, PFHxS, NetFOSAA and NMeFOSAA all have linear and branched isomers that can appear in environmental sample results. Therefore technical grade (linear and branched isomers) standards or neat materials of these compounds, if available, should be used for standard preparation. I have attached a copy of Method 537 and a Technical Advisory for PFOA to help with clarification.

Sincerely,
Will

William A. Adams, Ph.D.
U.S. EPA, OGWDW/SRMD/TSC
26 W. Martin Luther King Dr.
Cincinnati, OH 45268
Tel: (513)569-7656

From: Laura Olah [mailto:info@cswab.org]
Sent: Wednesday, April 18, 2018 3:15 PM
To: Adams, William <Adams.William@epa.gov>
Cc: Hautman, Dan <Hautman.Dan@epa.gov>
Subject: RE: list of branched and linear isomers

Okay, I followed most of that...

Here's the work plan that I'm trying to decipher (attached as .pdf). If you search for the term "linear" you will find the relevant sections fairly quickly. In short, I'm trying to figure what analytes will be included in groundwater and drinking water testing.

This may not change your answer, but thought context might help.

In any case -- thank you!!

Laura

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From: Hautman, Dan [<mailto:Hautman.Dan@epa.gov>]
Sent: Wednesday, April 18, 2018 10:48 AM
To: info@cswab.org
Cc: Adams, William
Subject: RE: list of branched and linear isomers

Laura,

Thank you for the thoughtful questions about linear and branched PFAS isomers. Let me begin by clarifying there is only one linear isomer each for PFOS and PFOA. This is the straight eight carbon, fluorinated linear chain that ends with either a sulfonic acid (PFOS) or carboxylic acid (PFOA). There are, however, potentially several dozens of branched isomers for both PFOS and PFOA, where the molecule has a total of eight carbon atoms but these are no longer in a straight chain of eight carbons, but rather "branched" off a main shorter carbon chain of seven or less carbons. The idea is similar to the isomers of DNT except that the eight carbon branched isomer arrangements of PFOS and PFOA have many more possibilities of isomeric configurations than a six carbon benzene ring of DNT. Likewise, other perfluorinated compounds listed in Method 537 have the potential for multiple isomers. We do not have a comprehensive list of the extensive array of all possible branched isomer configurations for the various PFAS.

I asked one of my senior staff chemists, Dr. William Adams (513-569-7656), to initially review your questions and he provided most of the above response. If you wish to further discuss, feel free to directly contact him.

Daniel P. Hautman, Deputy Director
Technical Support Center
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513-569-7274

From: Laura Olah [<mailto:info@cswab.org>]
Sent: Tuesday, April 17, 2018 11:40 AM
To: Hautman, Dan <Hautman.Dan@epa.gov>
Cc: info@cswab.org
Subject: list of branched and linear isomers

Dear Dan,

I found you via <https://www.epa.gov/sites/production/files/2016-09/documents/pfoa-technical-advisory.pdf>

I live near a former Army ammunition plant in Wisconsin and am reviewing a military report that says: "Branched and linear isomers will be reported for both PFOA and PFOS."

Could you please send me a list of the compounds for each of these? Acronyms are fine.

- **Branched isomers of PFOA:**

- **Linear isomers of PFOA:**
- **Branched isomers of PFOS:**
- **Linear isomers of PFOS:**

Q2: In this context, is the term “isomer” similar to DNTs which have six isomers (2,4-DNT, 2,6-DNT, 2,3-DNT, 2,5-DNT, 3,4-DNT and 3,5-DNT)?

Q3: Do the other PFAS analytes (in Method 537) have still other “branched and linear isomers”? Where can I find lists for these?

Thank you! I’m sure you get a lot of inquiries so appreciate your time.

Laura

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